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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/619,364	07/14/2003	Philip Head	22618	6817

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EXAMINER


GAY, JENNIFER HAWKINS

ART UNIT PAPER NUMBER

3672

DATE MAILED: 03/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

 Office Action Summary	Application No. 10/619,364	Applicant(s) HEAD, PHILIP	
	Examiner Jennifer H Gay	Art Unit 3672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20-46 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 20-46 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

The Preliminary Amendments filed 07 October, 2003 and 19 November, 2003 have been entered and considered with the Office Action below. It is noted that the two amendments are identical.

Priority

1. If applicant desires benefit of a previously filed application under 35 U.S.C. 120, specific reference to the earlier filed application must be made in the instant application. For benefit claims under 35 U.S.C. 120, 121 or 365(c), the reference must include the relationship (i.e., continuation, divisional, or continuation-in-part) of the applications. This should appear as the first sentence(s) of the specification following the title, preferably as a separate paragraph unless it appears in an application data sheet. The status of nonprovisional parent application(s) (whether patented or abandoned) should also be included. If a parent application has become a patent, the expression "now Patent No. ____" should follow the filing date of the parent application. If a parent application has become abandoned, the expression "now abandoned" should follow the filing date of the parent application.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "37" has been used to designate a liner tube, a sensor support, and a rock type sensor.
3. The drawings are objected to because on the right-hand side of Figure 3, one of the reference characters "37" is shown as indicating any feature of the drawing.
4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 82.

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5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 20, 24, 64a-64e, 65, 92, 94, 96, and 100.

6. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

7. The disclosure is objected to because it appears that the specification is missing a page as the description of Figure 18 is mostly lacking when compared to the parent application.

Appropriate correction is required.

Claim Objections

8. Claims 20, 29, 42-44, and 46 are objected to because of the following informalities:

- Claims 20, 29, 44, and 46 are objected to because to contain limitations for which there is no proper antecedent basis. Examples of these limitations are “the drilling fluid”, “the annulus”, “the tubing”, and “the borehole”. The claims should be reviewed and all such errors corrected.

- Claims 42 and 43 are objected to because they recite “An apparatus according to claim 36...”, however claim 36 is a method claim. The claims should be amended accordingly.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 20-22, 24, 26-30, 33-36, 38, and 40-45 are rejected under 35 U.S.C. 102(e) as being anticipated by Portman et al. (US 6,651,289).

Regarding claims 20, 29: Portman et al. discloses an apparatus for downhole drilling that includes the following features:

- A drilling unit that includes a drill bit 64.
- A motor 12, 14, 16 to drive the drill bit.
- A pumping means 20, 22 to move drilling fluid through the annulus between the tubing 66 on which the drill bit is located and the wellbore and through the bore of the tubing.

Regarding claims 21, 30, 41: The motor is an electric motor and a cable means 10 is disposed along the tubing to energize the motor.

Regarding claims 22, 29: The pump means is located downhole.

Regarding claims 24, 40: The pump means includes two pumps that are disposed at different locations on the tubing (Figure 1).

Regarding claims 26, 33, 38: The pump is disposed in the bore of the tubing.

Regarding claims 27, 28, 35, 36, 42, 43: The apparatus includes sensors for monitoring the motor and drill bit, i.e. the speed and location of the bit (14:64-15:34).

Regarding claim 36: Portman et al. discloses a method for using the above apparatus that involves the following steps:

- Advancing the bit into the borehole using the tubing. The inner flow path and the annulus provide a circulation path between the drill bit and the surface.
- Driving the drill bit using the motor.
- Supplying the drill bit with drilling fluid through the circulation path.
- Causing the fluid to flow through the annulus and the flow path.

Regarding claim 44: Portman et al. discloses an apparatus for downhole drilling that includes the following features:

- A drilling unit that includes a drill bit **64** disposed on tubing **66**.
- A motor **12, 14, 16** to drive the drill bit.
- A thruster means (14:50-65) on the tubing to engage the inner surface of the borehole to urge the tubing downward.
- A cable means **10** to energize the downhole equipment.

Regarding claim 45: The thruster means includes at least two thruster units that would be inherently located at different locations on the tubing (14:50-65).

11. Claim 46 is rejected under 35 U.S.C. 102(e) as being anticipated by Dorel (US 6,047,784).

Dorel discloses an apparatus for downhole drilling that includes the following features:

- A drilling unit that includes a drill bit **15** disposed on tubing **20**.
- A motor **13** to drive the drill bit.
- A pumping means (not shown) that moves drilling fluid through the wellbore, i.e. through the annulus between the tubing and the borehole wall and the internal bore of the tubing.
- Formation sensors (3:65-4:25) for determining characteristics of the formation surrounding the tubing.
- A cable means **5** disposed along the tubing for energizing the sensors.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 23, 25, 31, 32, 37, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Portman et al. (US 6,651,289) in view of Wallussek et al. (US 4,596,293).

Regarding claims 23, 31, and 39: Portman et al. discloses all of the limitations of the above claims except for the pump being an electric pump.

Wallussek et al. discloses a system and method similar to that of Portman et al. Wallussek et al. further teaches the use of a pump that could be either hydraulic or electric (5:20-27).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified the system of Portman et al. to use an electric pump instead of a hydraulic pump as taught by Wallussek et al. in order to have eliminated the need for downhole hydraulic fluid or motivating fluid thus reducing the likelihood of failure.

Further, it would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have used an electric pump instead of a hydraulic pump, since the examiner takes Official Notice of the equivalence of an electric pump and a hydraulic pump for their use in the downhole drilling art and the selection of any of these known equivalents to move drilling fluid would be within the level of ordinary skill in the art as evidenced by Wallussek et al..

Regarding claims 25, 32, and 37: Portman et al. discloses all of the limitations of the above claims except for the pump being located in the annulus upon the outer surface of the tubing.

Wallussek et al. further teaches that the drilling unit includes an inner and outer tube with the pump 10 being located on the outer surface of the inner tube (Figure 3).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified the apparatus of Portman et al. so that the pump was located on the outer surface of the tubing as taught by Wallussek et al. in order to have not inhibited the flow of fluid through the bore of the tubing thus not effecting the pressure within the tubing.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The remaining references made of record disclose various downhole drilling systems.

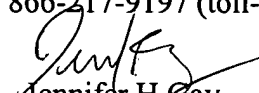
15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer H Gay whose telephone number is (703) 308-2881. The examiner can normally be reached on Monday-Thursday, 6:30-4:00 and Friday, 6:30-1:00.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on (703) 308-2151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

As applicant may be aware, the USPTO is in the process of moving to a new, consolidated campus. The examiner is currently still located at the old campus and can be reached at the above phone number. However, starting on 31 March 2005 all calls to the examiner should be made using a new telephone number, which is (571) 272-7029. Starting on that date, David Bagnell can be reached at (571) 272-6999. Please note that the official fax number will not be changing.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jennifer H. Gay
Patent Examiner
Art Unit 3672

JHG 
February 25, 2005